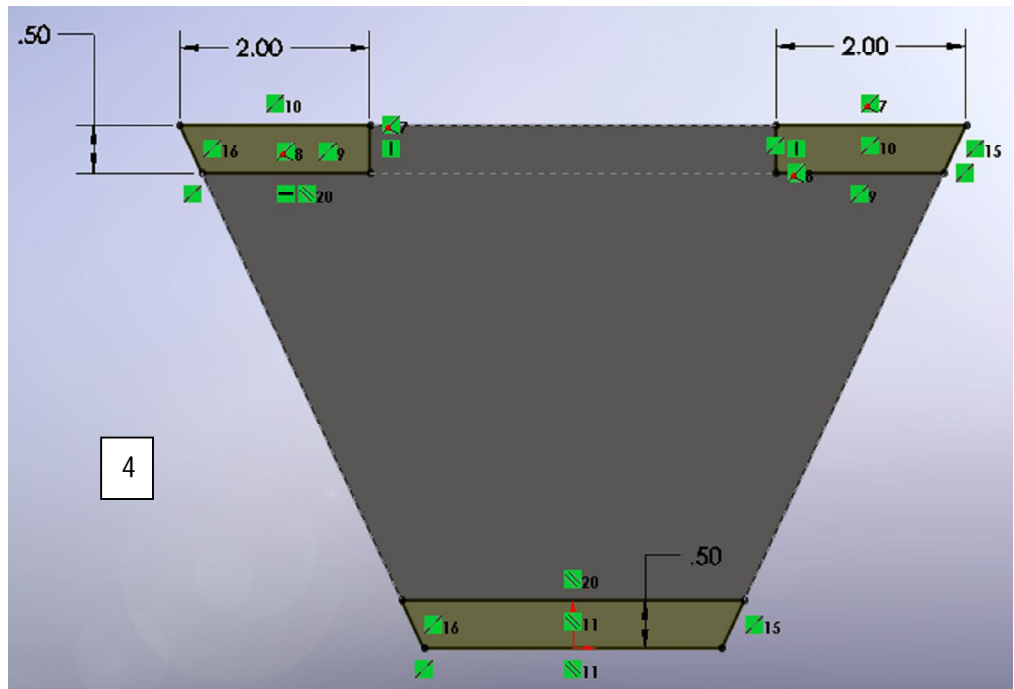
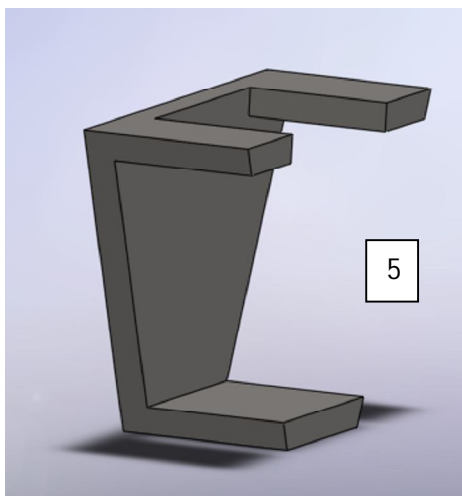
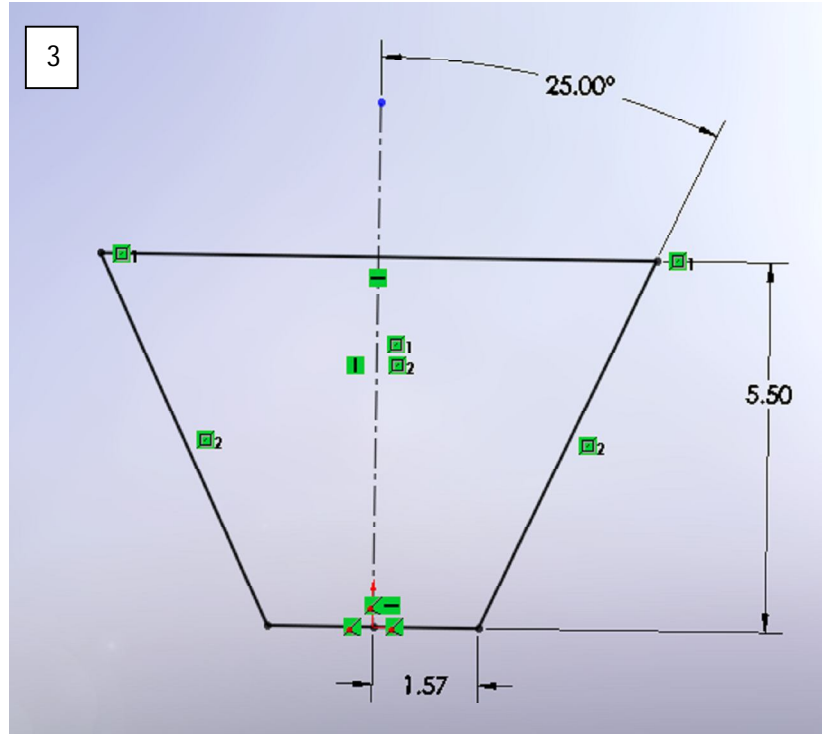
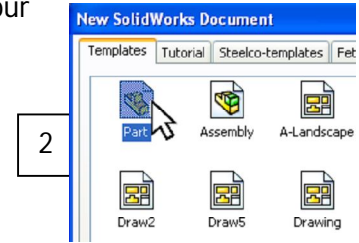
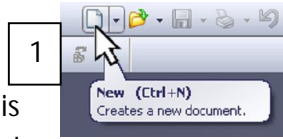


Design 0100, Weekly Design Guide Quarter 3, Week 3, Wheel Suspension

This week we will build a Wheel Suspension for the both the front and rear of our Go Cart. Perform the following steps:

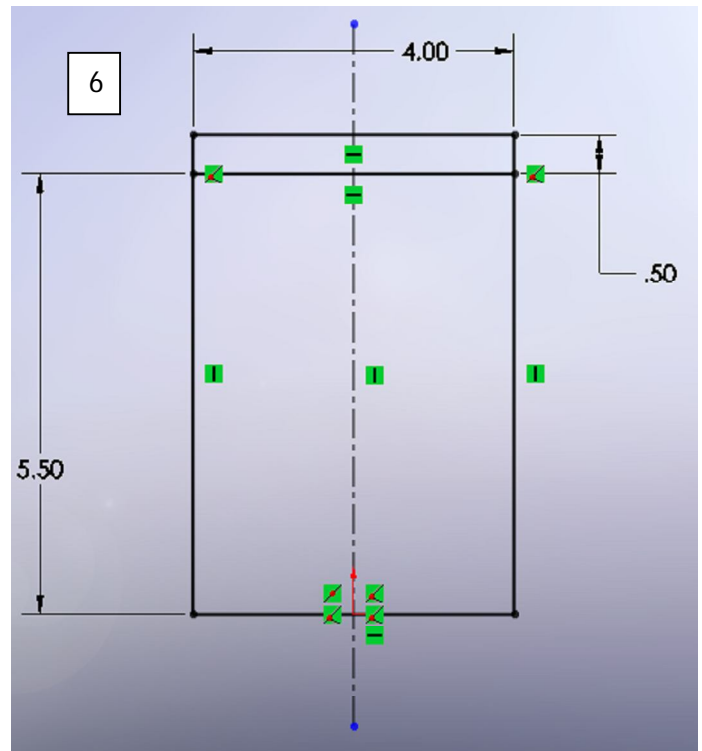
For the Wheel Mount open a new document:

1. Choose "New" then press "OK"
2. Select "Part" from the "Templates" tab. Save this part (even before you do any work) to your thumb drive in the new "Go Cart" folder and name it "Rear Suspension". In the Description section type in "REAR SUSPENSION" in Capital letters.
3. After saving, choose the "Sketch" tab from the "Command Manager" and produce a sketch similar to the one shown nearby. Draw the vertical centerline first then draw on one side of that line using the dimensions shown. When done with one side, mirror what you have sketched to the other side using the "Mirror" sketch entity.
4. Extrude this out using the "Mid Plane" option with a thickness of $\frac{1}{2}$ ". On the right face that was just modeled sketch the sketch shown nearby. Use collinear relations between the top of the model and the sketch items on the top. Do the same for the sides for both the top and the bottom sketch items. For the bottom sketch item use the bottom of the model and the bottom sketch line for a collinear relation.
5. Extrude this sketch to $2\frac{1}{2}$ ". The result should look like the image nearby.

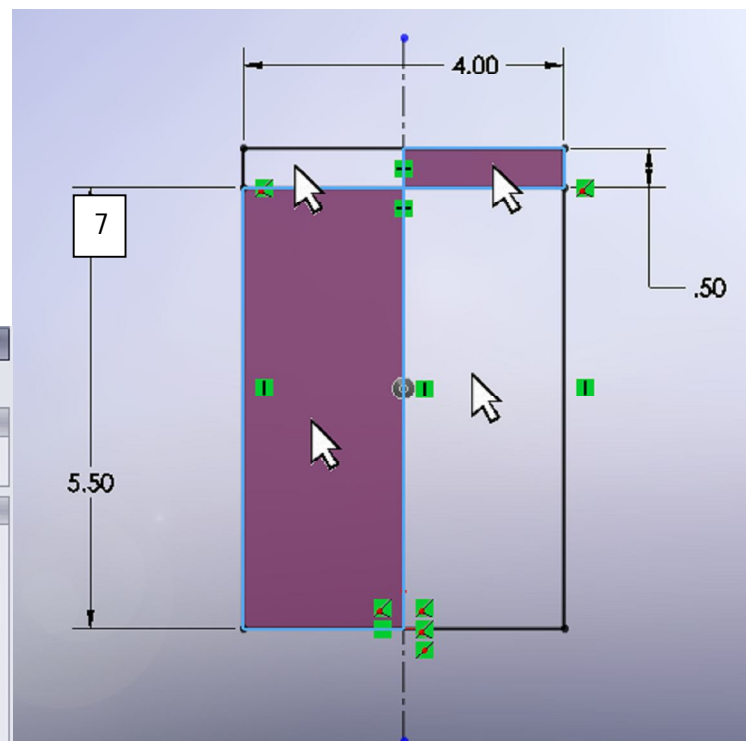


Design 0100, Weekly Design Guide
Quarter 3, Week 3, Wheel Suspension

6. For the Front Suspension start as you did for the Rear Suspension. On the Right Plane sketch the sketch shown nearby.

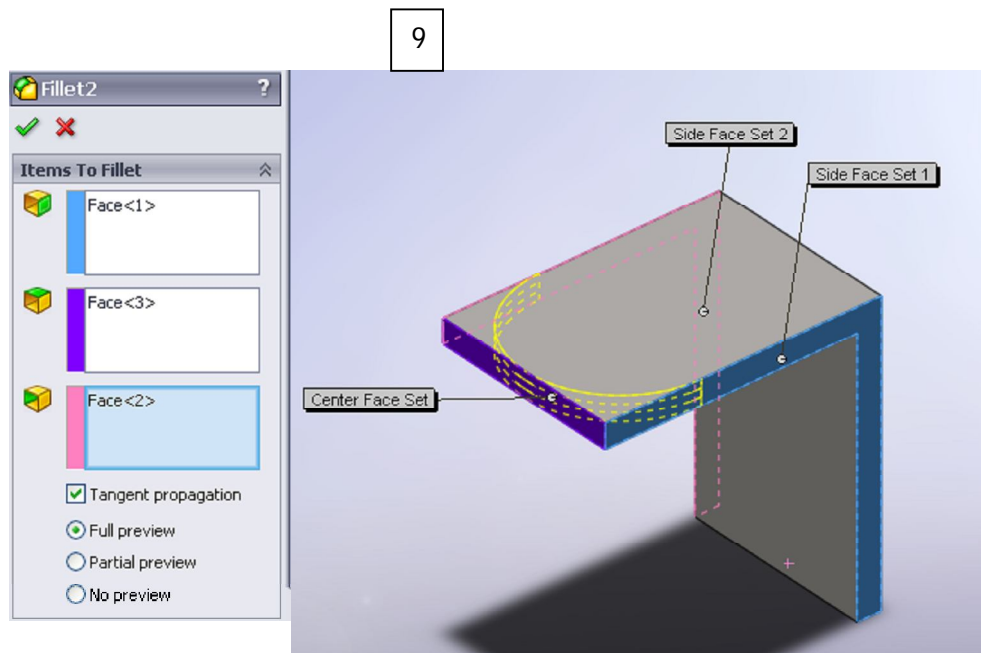
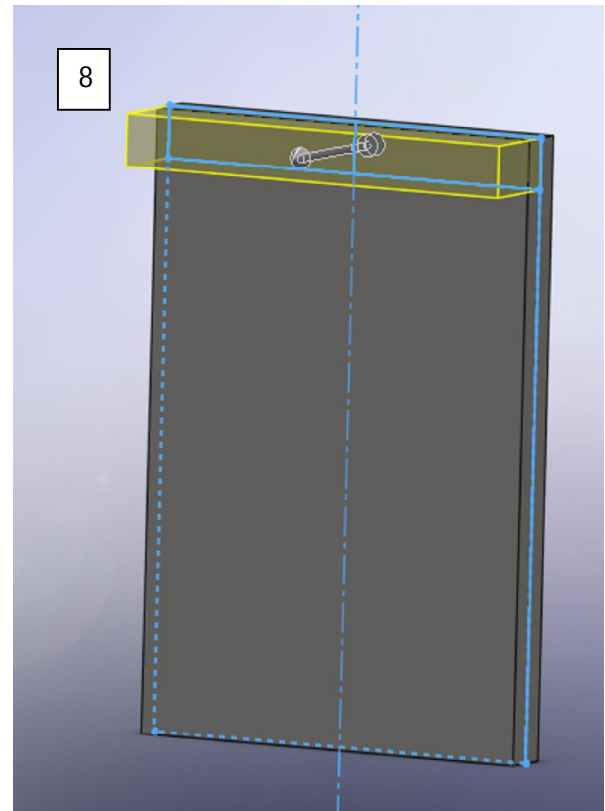


7. Extrude this to 1/2" using the Mid Plane option and selecting the four regions in the "elected Contours" option box shown below. The Selected Contours will allow you to extrude only portions of the sketch drawn if there are more than one enclosed region.



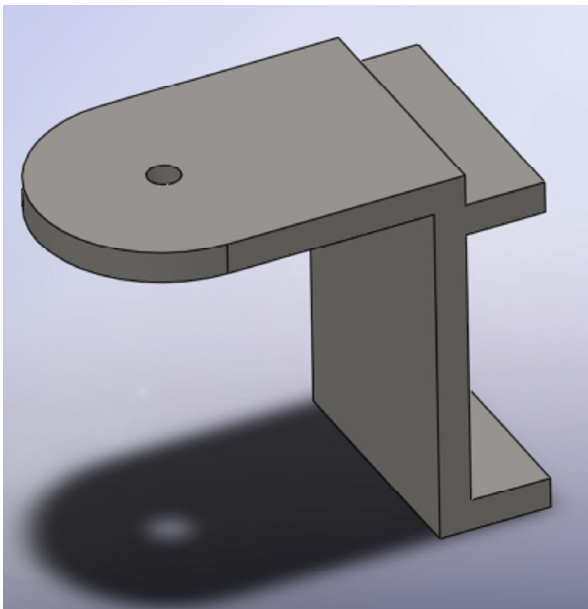
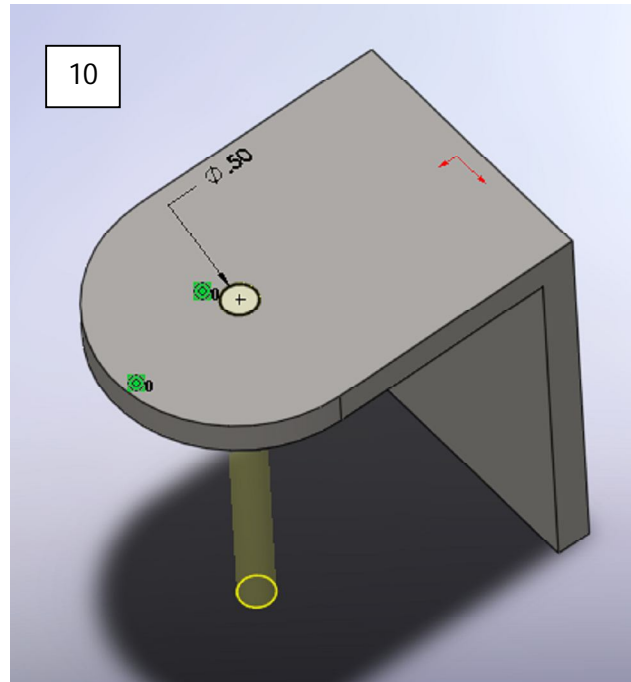
Design 0100, Weekly Design Guide
Quarter 3, Week 3, Wheel Suspension

8. Select the original sketch buried in "Extrude 1" and choose "Extrude Boss/Base" again. Make certain the direction is in the opposite direction of the point of view. In the Selected Contours option box choose the two top regions shown. Extrude this to 5 1/2".
9. Add a fillet and choose the "Full Face Fillet" option. For this feature you need to choose three faces of your object to form a fillet around all faces. Choose the faces shown below.



Design 0100, Weekly Design Guide
Quarter 3, Week 3, Wheel Suspension

10. Create a $\frac{1}{2}$ " hole on the top of your Front Suspension model. Choose the top face of your model and draw a circle. Dimension this circle to $\frac{1}{2}$ ". Select this circle and the edge of your fillet and provide a "Concentric" relation between them. This should fully define your sketch. Extrude cut this using the "Through All" option.
11. Choose the opposite face and sketch the sketch shown below. Make the sides of the sketch items "Collinear" with the sides of the model and with the bottom sketch item make the bottom line "Collinear" with the bottom edge of the model. Extrude this to $1\frac{1}{4}$ ".
12. The Front Suspension model should resemble the image below.



12

